

## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: TRINITY, INC Examiner #: 69332 Date: 8/8/05  
 Art Unit: 1711 Phone Number 302-121 Serial Number: 61885204  
 Mail Box and Bldg/Room Location: 10271 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: \_\_\_\_\_

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

General formula (I) in claim 1

SCIENTIFIC REFERENCE BR  
 Sci & Tech Inf. Cntr

AUG 09 RECD

Pat. & T.M. Office

## STAFF USE ONLY

## Type of Search

## Vendors and cost where applicable

Searcher: <u>EL</u>	NA Sequence (#) _____	STN _____
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____
Date Completed: <u>8-18-05</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: _____	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: _____	Other _____	Other (specify) _____

60/805,204

RESPONSE TO ELECTION OF SPECIES REQUIREMENT  
AND AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. APPLN. NO. 10/805,204

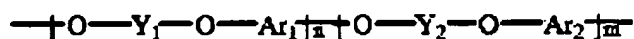
ATTY DKT Q80610

# AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

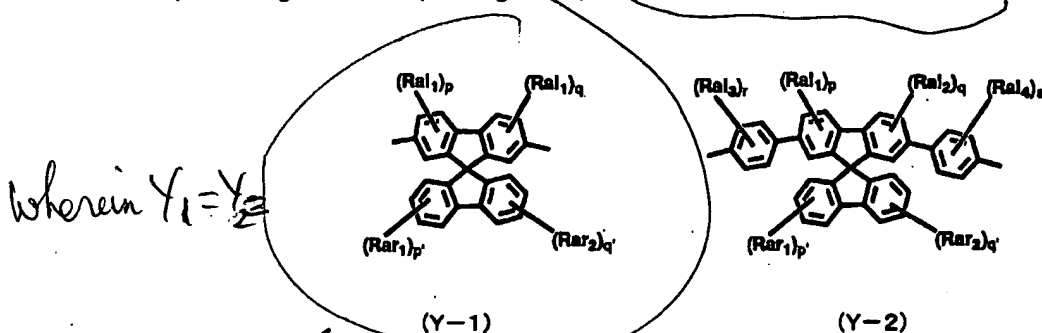
## LISTING OF CLAIMS:

1. (original): An insulating-film forming material comprising a resin (A) that has a structure represented by general formula (I):



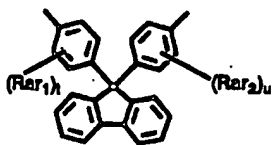
(I)

wherein Y<sub>1</sub>, Y<sub>2</sub>, Ar<sub>1</sub> and Ar<sub>2</sub> are the same or different; each of Y<sub>1</sub>, Y<sub>2</sub>, Ar<sub>1</sub> and Ar<sub>2</sub> represents an aromatic ring-containing divalent organic group; at least one of Y<sub>1</sub> and Y<sub>2</sub> is selected from the group consisting of formulae (Y-1), (Y-2), (Y-3) and (Y-4); m and n each indicates a molar percentage of the repeating units; and m falls between 0 and 100 with (m + n) = 100;

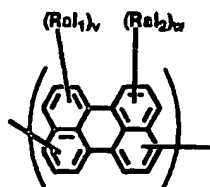


(NOT MUCH HERE, SO SEARCHED THE OTHER Ys ALSO.)





(Y-3)



(Y-4)

in formulae (Y-1) and (Y-2),  $Ral_1$  to  $Ral_4$  each represents a monovalent hydrocarbon group not containing an aromatic ring;  $Rar_1$  and  $Rar_2$  each represents an aromatic ring-containing monovalent hydrocarbon group;  $Ral_1$  to  $Ral_4$ ,  $Rar_1$  and  $Rar_2$  may bond to each other to form a ring; and  $p$ ,  $q$ ,  $r$ ,  $s$ ,  $p'$  and  $q'$  each indicates an integer of from 0 to 3; and

in formulae (Y-3) and (Y-4),  $Ral_1$  and  $Ral_2$  each represents a monovalent hydrocarbon group not containing an aromatic ring;  $Rar_1$  and  $Rar_2$  each represents an aromatic ring-containing monovalent hydrocarbon group;  $Ral_1$ ,  $Ral_2$ ,  $Rar_1$  and  $Rar_2$  may bond to each other to form a ring;  $t$  and  $u$  each indicates an integer of from 1 to 4; and  $v$  and  $w$  each indicates an integer of from 0 to 4.

**2. (original):** The insulating-film forming material as claimed in claim 1, wherein each of  $Y_1$  and  $Y_2$  in formula (I) is selected from the group consisting of formulae (Y-1) and (Y-2).

**3. (currently amended):** The insulating-film forming material as claimed in claim 1, wherein each of  $Y_1$  and  $Y_2$  in formula (I) is selected from the group consisting of (Y-3) and (Y-4), and each of  $Ar_1$  and  $Ar_2$  is selected from the group consisting of the following groups [Ar]:

=> file reg  
 FILE 'REGISTRY' ENTERED AT 18:41:15 ON 18 AUG 2005  
 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
 COPYRIGHT (C) 2005 American Chemical Society (ACS)

=> d his

FILE 'LREGISTRY' ENTERED AT 17:01:30 ON 18 AUG 2005  
 L1 STR  
 L2 STR

FILE 'REGISTRY' ENTERED AT 17:03:46 ON 18 AUG 2005  
 L3 SCR 2043  
 L4 0 S L1 AND L2 AND L3

FILE 'LREGISTRY' ENTERED AT 17:05:45 ON 18 AUG 2005  
 L5 STR L1

FILE 'REGISTRY' ENTERED AT 17:25:09 ON 18 AUG 2005  
 L6 17 S L5 AND L2 AND L3

FILE 'HCAPLUS' ENTERED AT 17:41:50 ON 18 AUG 2005  
 L7 87 S ADEGAWA Y?/AU  
 L8 331631 S INSULAT?  
 L9 9 S L7 AND L8  
 SEL L9 1-9 RN

FILE 'REGISTRY' ENTERED AT 17:42:37 ON 18 AUG 2005  
 L10 35 S E1-E35  
 L11 16 S L10 AND PMS/CI  
 L12 229 S L5 AND L2 AND L3 FUL  
 SAV L12 TRU204/A  
 L13 STR  
 L14 4 S L13 SSS SAM SUB=L12  
 L15 STR  
 L16 2 S L13 AND L15 SSS SAM SUB=L12  
 L17 STR L15  
 L18 2 S L13 AND L17 SSS SAM SUB=L12  
 L19 47 S L13 AND L17 SSS FUL SUB=L12  
 SAV L19 TRU204A/A  
 L20 STR L5  
 L21 0 S L20 AND L13 AND L17 SSS SAM SUB=L12  
 L22 3 S L20 AND L13 AND L17 SSS FUL SUB=L12  
 SAV L22 TRU204B/A

L23 44 S L19 NOT L22  
 L24 1078 S 9841.9.1/RID  
 L25 6 S L12 AND L24  
 L26 6 S L22 OR L25  
 L27 44 S L19 NOT L26  
 L28 6 POLYLINK L26  
 L29 44 POLYLINK L27

FILE 'ZCA' ENTERED AT 18:28:08 ON 18 AUG 2005

L30 3 S L28  
 L31 96 S L29  
 L32 504378 S INSULAT? OR DIELEC?  
 L33 82 S L31 AND L32

FILE 'LCA' ENTERED AT 18:30:34 ON 18 AUG 2005

L34 7647 S (FILM? OR THINFILM? OR LAYER? OR OVERLAY? OR OVERLAID?)

FILE 'HCA' ENTERED AT 18:33:11 ON 18 AUG 2005

L35 3 S L28  
 L36 96 S L31  
 L37 149743 S (INSULAT? OR DIELEC?) (2A)L34  
 L38 67 S L36 AND L37

FILE 'REGISTRY' ENTERED AT 18:36:42 ON 18 AUG 2005

L39 1 S 213329-13-6  
 L40 1 S 272115-24-9  
 L41 42 S L29 NOT (L39 OR L40)

FILE 'HCA' ENTERED AT 18:37:05 ON 18 AUG 2005

L42 21 S L41  
 L43 6 S L42 AND L37  
 L44 9 S L42 AND L32  
 L45 8 S (L43 OR L44) NOT L35

FILE 'REGISTRY' ENTERED AT 18:41:15 ON 18 AUG 2005

=> d l22 que stat  
 L2 STR

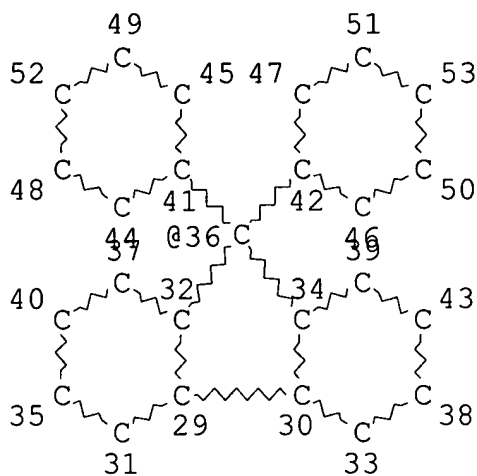
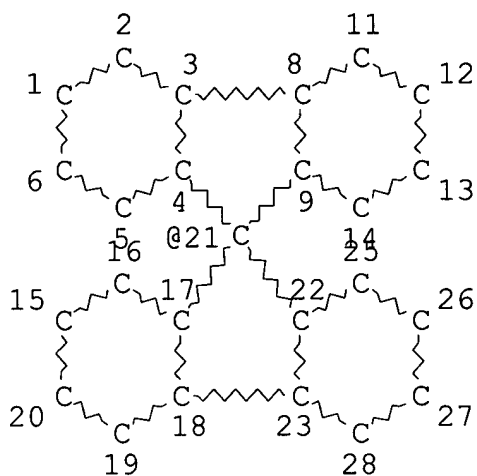
C≡C  
 1 2

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 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

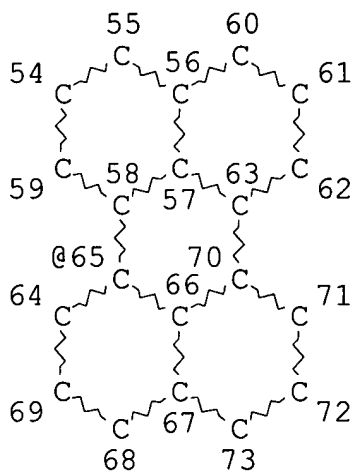
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NUMBER OF NODES IS 2

STEREO ATTRIBUTES: NONE  
L3 SCR 2043  
L5 STR



G1 78

Page 1-A



Page 2-A

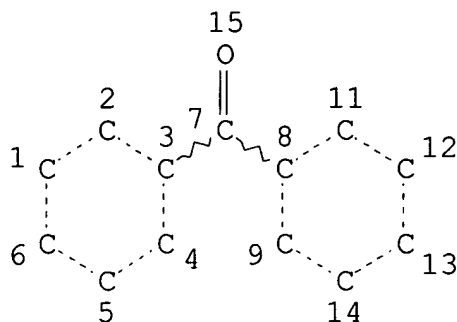
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STEREO ATTRIBUTES: NONE

L12 229 SEA FILE=REGISTRY SSS FUL L5 AND L2 AND L3

L13 STR



NODE ATTRIBUTES:

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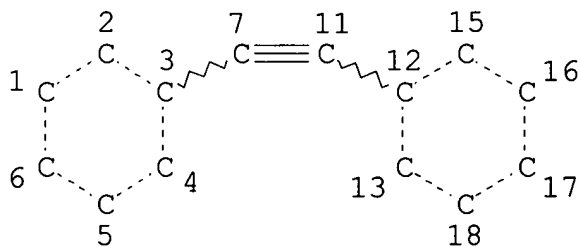
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STEREO ATTRIBUTES: NONE

L17 STR



NODE ATTRIBUTES:

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DEFAULT ECLEVEL IS LIMITED

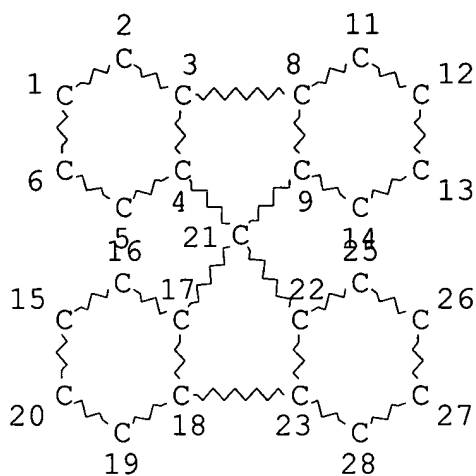
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NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE

L20 STR



NODE ATTRIBUTES:

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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 25

STEREO ATTRIBUTES: NONE

L22 3 SEA FILE=REGISTRY SUB=L12 SSS FUL L20 AND L13 AND L17

100.0% PROCESSED 3 ITERATIONS

3 ANSWERS

SEARCH TIME: 00.00.01

=> file hca

FILE 'HCA' ENTERED AT 18:42:17 ON 18 AUG 2005

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

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(y-1 out)

=> d 135 1-3 ibib abs hitstr hitrn

L35 ANSWER 1 OF 3 HCA COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 141:380780 HCA

TITLE: Block copolymer-based materials for formation of porous insulating films with good heat



INVENTOR(S): resistance  
 Adegawa, Yutaka  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 37 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004300314	A2	20041028	JP 2003-96063	20030331
PRIORITY APPLN. INFO.:			JP 2003-96063	20030331

AB Title materials comprise (A) block copolymers of (Y10Ar10)n and (Y20Ar20)m (Y1, Y2, Ar1, Ar2 = arom. group- or Si-contg. divalent org. group; n = 10-90; m + n = 100) and (B) (a) compds. having b.p. or decompn. point 250-450.degree. and/or (b) hollow fine particles. The block copolymers may have groups generating gases by thermal decompn. at 250-450.degree., UV radiation, or electron-beam radiation. Thus, a compn. contg. bis(4-fluorophenyl)acetylene-bis(p-fluorophenyl) ketone-9,9'-spirobi[9H-fluorene]-2,2'-diol block copolymer and Newpol PE 61 (ethylene oxide-propylene oxide triblock copolymer) was applied on a Si wafer and fired to give a film showing good crack resistance and dielec. const. 2.09.

IT **778648-60-5P 780781-72-8P 781645-22-5P**  
**781645-25-8P 781645-28-1P**

(block polyoxyarylene-based materials for manuf. of crack-resistant porous insulating films)

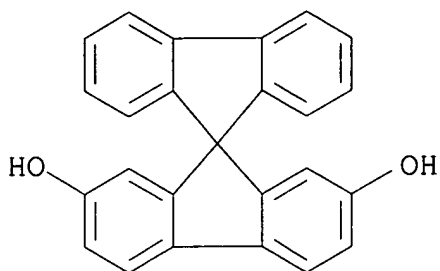
RN 778648-60-5 HCA

CN Methanone, bis(4-fluorophenyl)-, polymer with 1,1'-(1,2-ethynediyl)bis[4-fluorobenzene] and 9,9'-spirobi[9H-fluorene]-2,7-diol (9CI) (CA INDEX NAME)

CM 1

CRN 778648-59-2

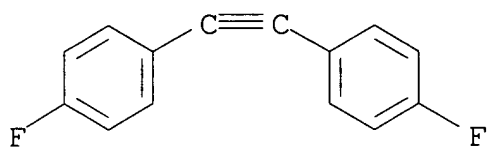
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CM 2

CRN 5216-31-9

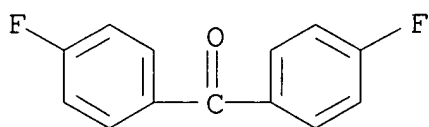
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CM 3

CRN 345-92-6

CMF C13 H8 F2 O



RN 780781-72-8 HCA

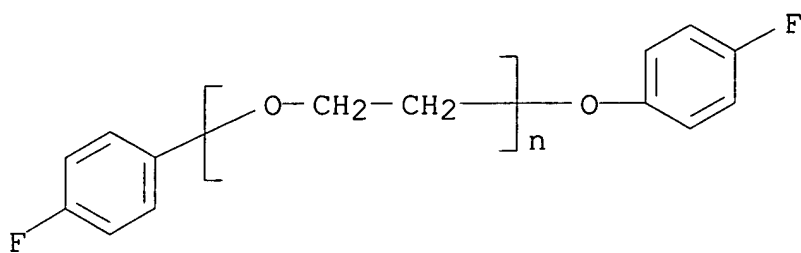
CN 9,9'-Spirobi[9H-fluorene]-2,7-diol, polymer with  
1,1'-(1,2-ethynediyl)bis[4-fluorobenzene] and .alpha.-(4-  
fluorophenyl)-.omega.-(4-fluorophenoxy)poly(oxy-1,2-ethanediyl)  
(9CI) (CA INDEX NAME)

CM 1

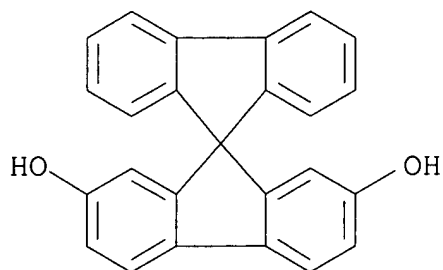
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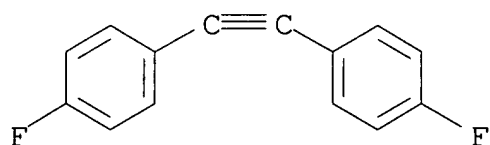
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CRN 778648-59-2  
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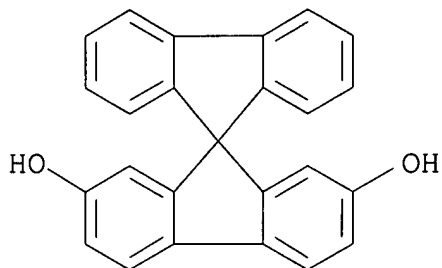


CRN 5216-31-9  
CMF C14 H8 F2



CRN 781645-21-4  
CMF C31 H28 O2

CCI IDS

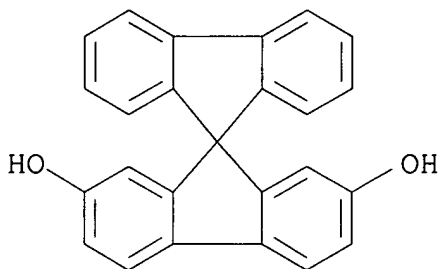


2 ( D1-Pr-i )

CM 2

CRN 778648-59-2

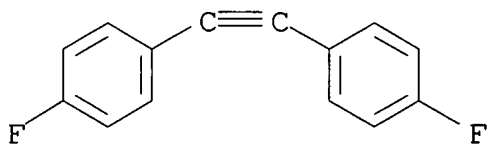
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CM 3

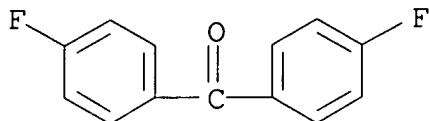
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CMF C14 H8 F2



CM 4

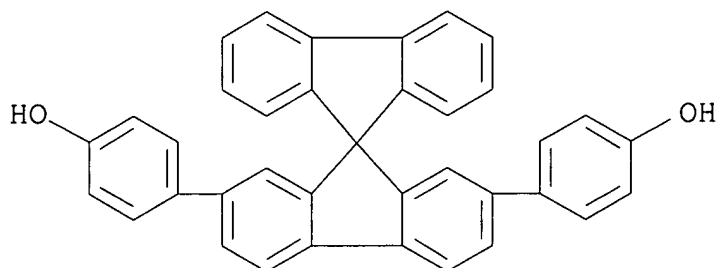
CRN 345-92-6  
CMF C13 H8 F2 O



RN 781645-25-8 HCA  
CN Methanone, bis(4-fluorophenyl)-, polymer with 4,4'-[ar,ar-bis(1-methylethyl)-9,9'-spirobi[9H-fluorene]-2,7-diyl]bis[phenol], 1,1'-(1,2-ethynediyl)bis[4-fluorobenzene] and 4,4'-(9,9'-spirobi[9H-fluorene]-2,7-diyl)bis[phenol], block (9CI) (CA INDEX NAME)

CM 1

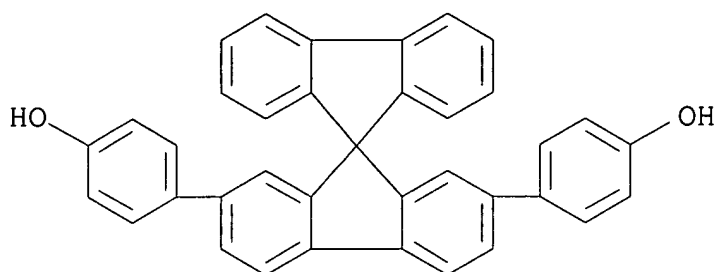
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CMF C43 H36 O2  
CCI IDS



2 ( D1-Pr-i )

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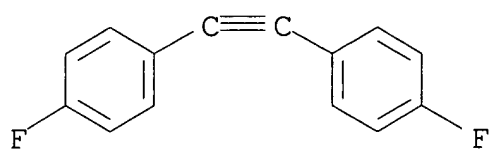
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CM 3

CRN 5216-31-9

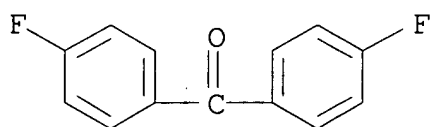
CMF C14 H8 F2



CM 4

CRN 345-92-6

CMF C13 H8 F2 O



RN 781645-28-1 HCA

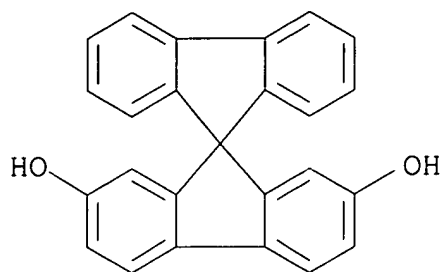
CN 9,9'-Spirobi[9H-fluorene]-2,7-diol, ar,ar-bis(1-methylethyl)-, polymer with 2,5-bis(4-fluorophenyl)-4-phenyloxazole, 1,1'-(1,2-ethynediyl)bis[4-fluorobenzene] and 9,9'-spirobi[9H-fluorene]-2,7-diol, block (9CI) (CA INDEX NAME)

CM 1

CRN 781645-21-4

CMF C31 H28 O2

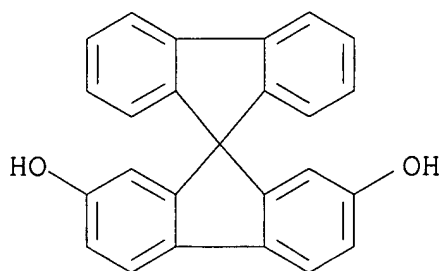
CCI IDS



2 ( D1- Pr-i )

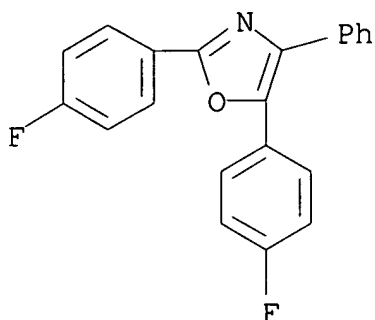
CM 2

CRN 778648-59-2  
CMF C25 H16 O2



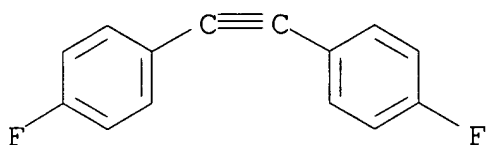
CM 3

CRN 313262-93-0  
CMF C21 H13 F2 N O



CM 4

CRN 5216-31-9  
CMF C14 H8 F2



IT **778648-60-5P 780781-72-8P 781645-22-5P**  
**781645-25-8P 781645-28-1P**

(block polyoxyarylene-based materials for manuf. of  
crack-resistant porous insulating films)

L35 ANSWER 2 OF 3 HCA COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 141:373680 HCA  
TITLE: Electrically insulating film materials for  
insulative inter layer for semiconductor device  
INVENTOR(S): Adegawa, Yutaka  
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 31 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
JP 2004297004	A2	20041021	JP 2003-90710	200303



PRIORITY APPLN. INFO.:

JP 2003-90710

28

200303

28

AB The title material is a block copolymer of  $[-Y1-O-Ar1-O-]_n$  and  $[-Y2-O-Ar2-O-]_m$  ( $Y1-2$ ,  $Ar1-2$  = 2-valent org. group contg. arom. ring or Si;  $n = 10-90$  mol %;  $m+n = 100$  mol %). The materials provides insulative film of high heat-resistance, good elec. insulation, and homogeneous thickness.

IT **778648-60-5P**

(Elec. insulating film materials)

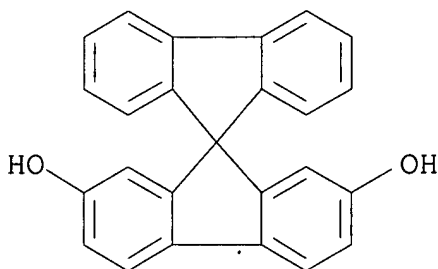
RN 778648-60-5 HCA

CN Methanone, bis(4-fluorophenyl)-, polymer with 1,1'-(1,2-ethynediyl)bis[4-fluorobenzene] and 9,9'-spirobi[9H-fluorene]-2,7-diol (9CI) (CA INDEX NAME)

CM 1

CRN 778648-59-2

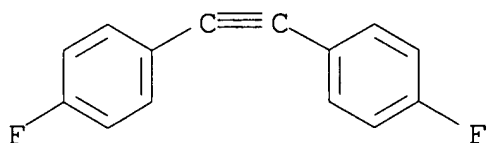
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CM 2

CRN 5216-31-9

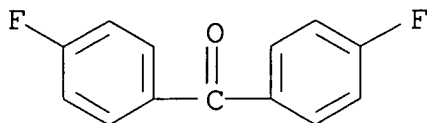
CMF C14 H8 F2



CM 3

CRN 345-92-6

CMF C13 H8 F2 O



IT **778648-60-5P**  
(Elec. insulating film materials)

L35 ANSWER 3 OF 3 HCA COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 135:159966 HCA  
 TITLE: Organicelectroluminescent devices employing  
 spiro compounds  
 INVENTOR(S): Suzuki, Koichi; Hashimoto, Yuichi; Senoo,  
 Akihiro; Ueno, Kazunori  
 PATENT ASSIGNEE(S): Canon Kabushiki Kaisha, Japan  
 SOURCE: Eur. Pat. Appl., 47 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1120840	A2	20010801	EP 2001-300728	20010126
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001210474	A2	20010803	JP 2000-19242	20000127
US 2002048686	A1	20020425	US 2001-768499	20010125
US 6458476	B1	20021001		
PRIORITY APPLN. INFO.:			JP 2000-19242	A 20000127

OTHER SOURCE(S): MARPAT 135:159966  
 AB Org. electroluminescent devices are described which are provided  
 with org. layers contg. selected spiro compds.  
 IT **352354-25-7**

(org. electroluminescent devices employing spiro compds.)  
 RN 352354-25-7 HCA  
 CN Poly[(4-methyl-3-octyl-2,5-thiophenediyl)-1,2-ethynediyl],  
 .alpha.,.alpha.',.alpha.'',.alpha.'''-9,9'-spirobi[9H-fluorene]-  
 2,2',7,7'-tetrayltetrakis[.omega.-(4-methyl-3-octyl-2-thienyl)-  
 (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 352354-25-7

(org. electroluminescent devices employing spiro compds.)

*(other Y act)*

=> d(145)1-8 cbib abs hitstr hitind

L45 ANSWER 1 OF 8 HCA COPYRIGHT 2005 ACS on STN

137:170341 Polyoxyarylene-based nanoporous polymers with low  
**dielectric** constants useful for integrated circuits. Drage,  
 Jim (Honeywell International Inc., USA). U.S. Pat. Appl. Publ. US  
 2002115735 A1 20020822, 10 pp. (English). CODEN: USXXCO.  
 APPLICATION: US 2001-792606 20010222.

AB The title polymers comprise hollow structures fabricated from  
 crosslinked polymeric strands, e.g., via Diels-Alder reaction of a  
 diene and a dienophile portion, wherein a plurality of first polymer  
 strands crosslinked with each other and forming a hollow structure,  
 and a plurality of second polymer strands crosslinked with each  
 other and coupled to at least one of the first polymer strand via a  
 covalent bond. One example of polyoxyarylene strands was obtained  
 from reaction of fluorenebisphenol with 4-fluoro-3'-(4-  
 fluorobenzoyl)tolane.

IT 418792-82-2P 418792-85-5P 447451-16-3P  
 447451-19-6P

(crosslinked; prepns. of nanoporous polyoxyarylenes useful for  
 integrated circuits)

RN 418792-82-2 HCA

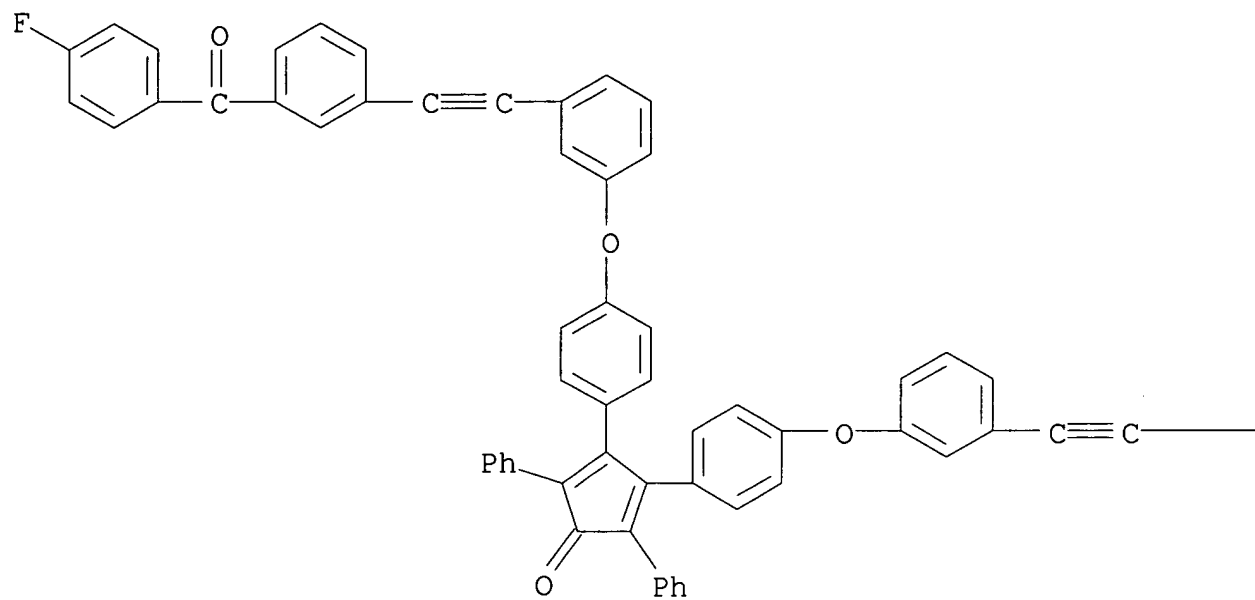
CN 2,4-Cyclopentadien-1-one, 3,4-bis[4-[3-[[3-(4-  
 fluorobenzoyl)phenyl]ethynyl]phenoxy]phenyl]-2,5-diphenyl-, polymer  
 with 4,4'-(9H-fluoren-9-ylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

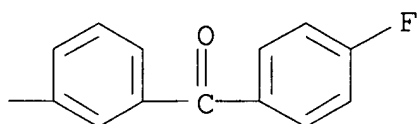
CRN 418792-81-1

CMF C71 H42 F2 O5

PAGE 1-A

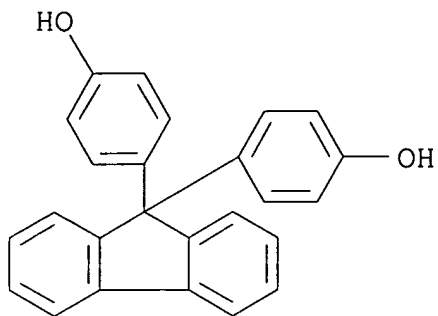


PAGE 1-B



CM 2

CRN 3236-71-3  
CMF C25 H18 O2



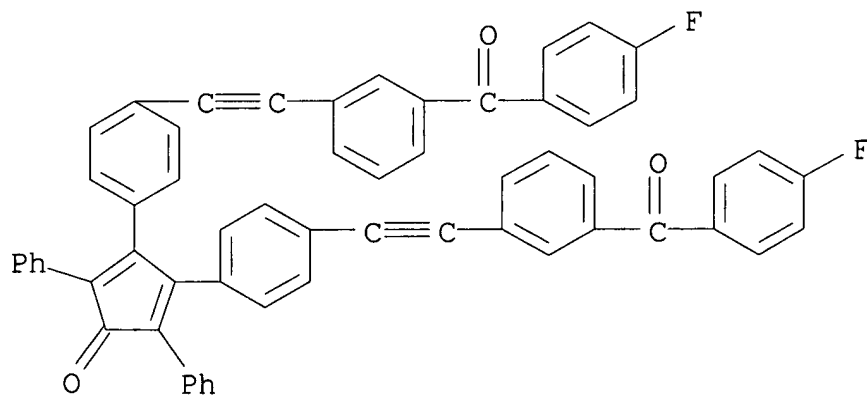
RN 418792-85-5 HCA

CN 2,4-Cyclopentadien-1-one, 3,4-bis[4-[[3-(4-fluorobenzoyl)phenyl]ethynyl]phenyl]-2,5-diphenyl-, polymer with 4,4'-(9H-fluoren-9-ylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 418792-84-4

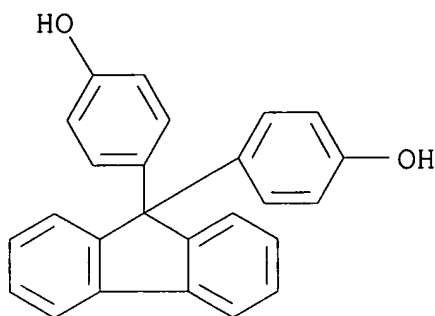
CMF C59 H34 F2 O3



CM 2

CRN 3236-71-3

CMF C25 H18 O2



RN 447451-16-3 HCA

CN Poly[oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,3-phenylene-1,2-ethynediyl-1,3-phenyleneoxy-1,4-phenylene(4-oxo-3,5-diphenyl-2,5-cyclopentadiene-1,2-diyl)-1,4-phenyleneoxy-1,3-phenylene-1,2-ethynediyl-1,3-phenylenecarbonyl-1,4-phenylene] (9CI) (CA INDEX NAME)

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

RN 447451-19-6 HCA

CN Poly[oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,3-phenylene-1,2-ethynediyl-1,4-phenylene(4-oxo-3,5-diphenyl-2,5-cyclopentadiene-1,2-diyl)-1,4-phenylene-1,2-ethynediyl-1,3-phenylenecarbonyl-1,4-phenylene] (9CI) (CA INDEX NAME)

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

IC ICM C08C001-00

ICS C08L001-00

INCL 521061000

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 76

ST polyoxyarylene based nanoporous polymer strand crosslinking hollow structure; fluorenebisphenol tolane low **dielec** const  
polyoxyarylene prepn integrated circuit

IT 272115-24-9P **418792-82-2P 418792-85-5P**

447451-11-8P 447451-12-9P 447451-13-0P 447451-14-1P

**447451-16-3P 447451-19-6P**

(crosslinked; prepn. of nanoporous polyoxyarylenes useful for integrated circuits)

L45 ANSWER 2 OF 8 HCA COPYRIGHT 2005 ACS on STN

137:47543 Synthesis of thermally cross-linkable fluorine-containing poly(aryl ether ketone)s I. Phenylethynyl terminated poly(aryl ether ketone)s. Kimura, Kunio; Nishichi, Ai; Yamashita, Yuhiko (Faculty of Environmental Science and Technology, Okayama University, Okayama, 700-8530, Japan). Polymer Journal (Tokyo, Japan), 34(3), 209-218 (English) 2002. CODEN: POLJB8. ISSN: 0032-3896. Publisher: Society of Polymer Science, Japan.

AB Fluorine-contg. poly(aryl ether ketone)s (PEKs) derived from 2,3,4,5,6-pentafluorobenzoic acid (PFBA) exhibit outstanding soly., thermal stability, low **dielec**. const., low moisture absorption and high transparency. Hence, they are expected to be available for optical and elec. materials. In such applications, excellent soly. is of great advantage for making thin films and coatings. This can be a disadvantage with respect to solvent resistance. Thermally crosslinkable fluorine-contg. PEKs terminated with the phenylethynyl moiety (PEK-PEP) are synthesized to improve the solvent resistance. Crosslinking occurs over 320.degree. and produces not only outstanding solvent resistance but also increased glass transition temps. The relationship between the crosslinking d. and Tg can be fundamentally interpreted by configurational entropy theory. Furthermore, the cured PEK-PEPs possess excellent thermal stability with the 10% wt. loss temp. in the range of 544.degree. to 598.degree..

IT **438588-47-7P**

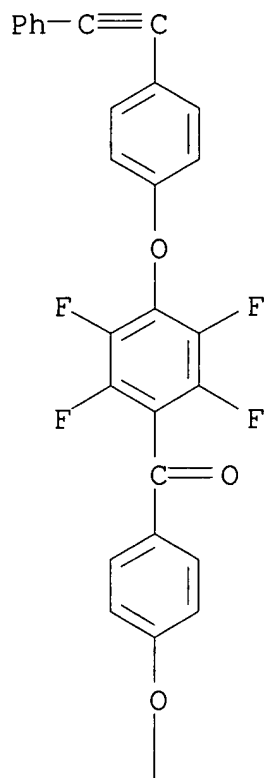
(synthesis of thermally crosslinkable fluorine-contg. phenylethynyl-terminated poly(aryl ether ketone)s)

RN 438588-47-7 HCA

CN Poly[oxy-1,4-phenylene-9H-fluorene-9-ylidene-1,4-phenyleneoxy(2,3,5,6-

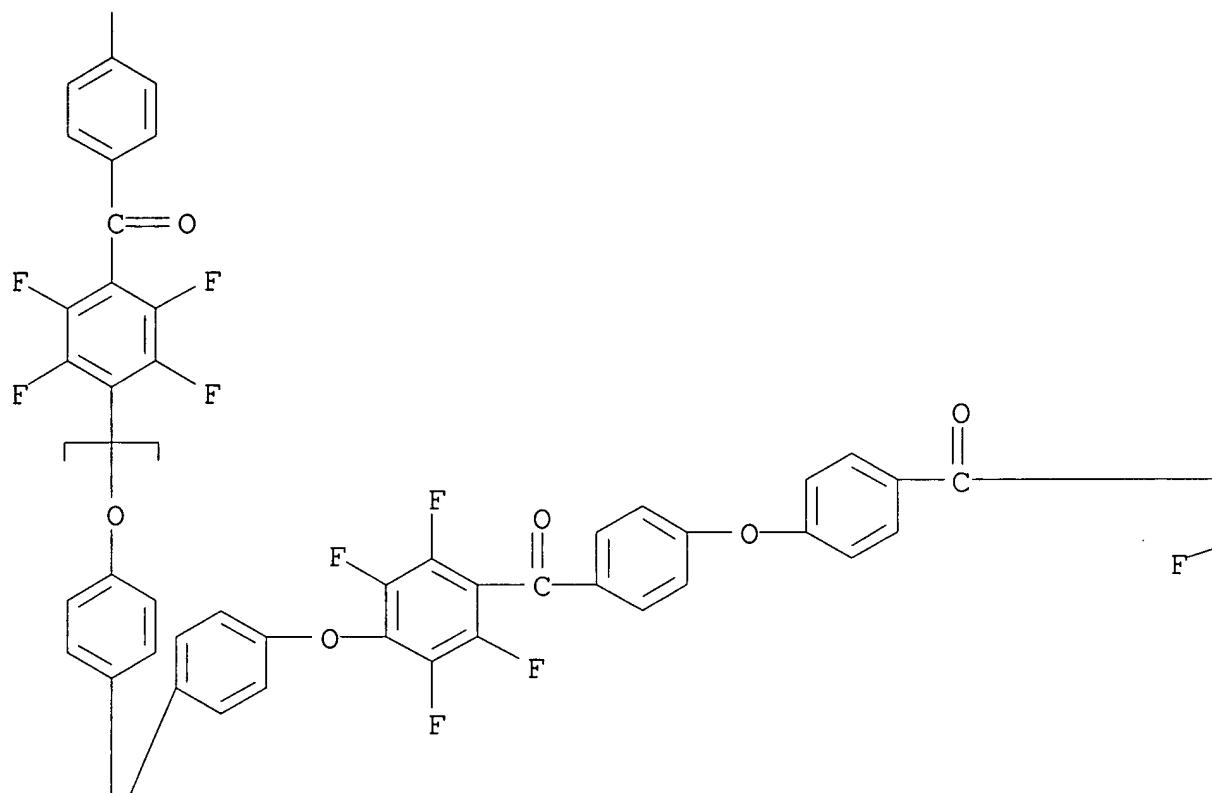
tetrafluoro-1,4-phenylene) carbonyl-1,4-phenyleneoxy-1,4-phenylenecarbonyl (2,3,5,6-tetrafluoro-1,4-phenylene)],  
 .alpha.-[2,3,5,6-tetrafluoro-4-[4-[4-[2,3,5,6-tetrafluoro-4-[4-(phenylethynyl)phenoxy]benzoyl]phenoxy]benzoyl]phenyl]-.omega.-[4-(phenylethynyl)phenoxy]- (9CI) (CA INDEX NAME)

PAGE 1-A

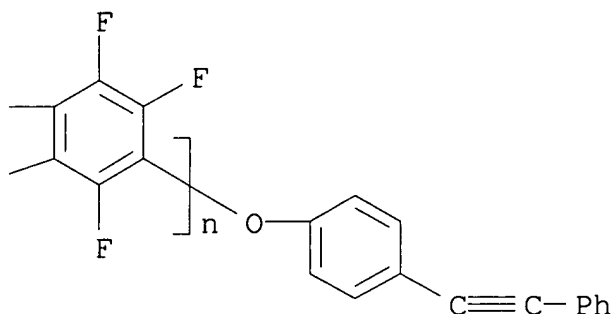




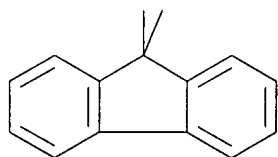
PAGE 2-A



PAGE 2-B



PAGE 3-A



- CC 35-5 (Chemistry of Synthetic High Polymers)
- IT 213693-06-2DP, phenylethynyl-terminated 213693-10-8DP,  
phenylethynyl-terminated 438588-46-6P **438588-47-7P**  
(synthesis of thermally crosslinkable fluorine-contg.  
phenylethynyl-terminated poly(aryl ether ketone)s)
- L45 ANSWER 3 OF 8 HCA COPYRIGHT 2005 ACS on STN  
136:342195 Photogenerated nanoporous polymeric network as  
**insulating coatings** having reduced  
**dielectric** constant. Yates, Stephen F. (Honeywell  
International Inc., USA). U.S. US 6380270 B1 20020430, 11 pp.  
(English). CODEN: USXXAM. APPLICATION: US 2000-671022 20000926.
- AB The title network, useful for integrated circuits, comprises a  
crosslinked polymer (A) such as poly(arylene ether), a porogen (B)

and a photoinitiator (C), wherein A is formed by Diels-Alder reaction from a linear polymer strand, and C produces a reactive species upon irradiation to react with B in a degradation reaction that degrades at least some of A. Thus, polymg. 35.042 g fluorene bisphenol (a diene component) with 31.83 g 4-fluoro-3'-(4-fluorobenzoyl)tolane (a dienophile) and end-capping with 4-fluorobenzophenone gave a polymer strand, which was dissolved in N-methylpyrrolidone, added with .apprx.0.2% Ph<sub>3</sub>S+SbF<sub>6</sub><sup>-</sup> (C component) and .apprx.2% poly(tert-butoxycarbonyloxystyrene) microsphere (B component), spin-coated on a sulfur wafer with a plurality of integrated circuits and heated up to 400.degree. for curing of A, then irradiated at room temp. for 90 s with 200-260 nm polychromatic UV light and subsequently heated to 160.degree. for degrading of B to give a title network having a T<sub>g</sub> >350.degree. and a **dielec.** const. .apprx.2.9.

IT **418792-78-6P 418792-80-0P 418792-82-2P**  
**418792-85-5P**

(crosslinked via Diels-Alder reaction; prepn. of photogenerated nanoporous polymeric network having reduced **dielec.** const.)

RN 418792-78-6 HCA

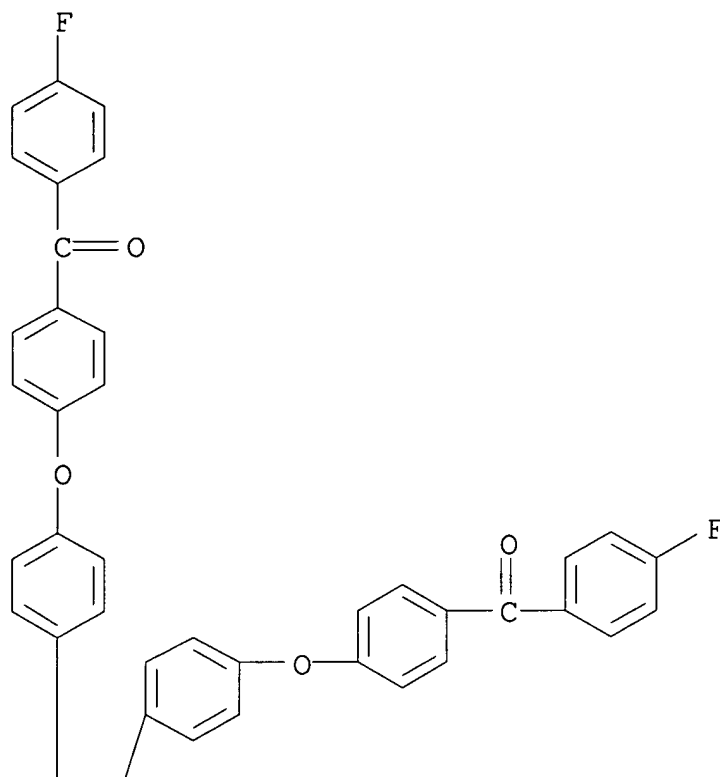
CN 2,4-Cyclopentadien-1-one, 3,4-bis[4-[4-(4-fluorobenzoyl)phenoxy]phenyl]-2,5-diphenyl-, polymer with 4,4'-(9H-fluoren-9-ylidene)bis[phenol] and (4-fluorophenyl)[3-[(4-fluorophenyl)ethynyl]phenyl]methanone (9CI) (CA INDEX NAME)

CM 1

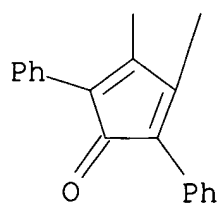
CRN 418792-77-5

CMF C55 H34 F2 O5

PAGE 1-A

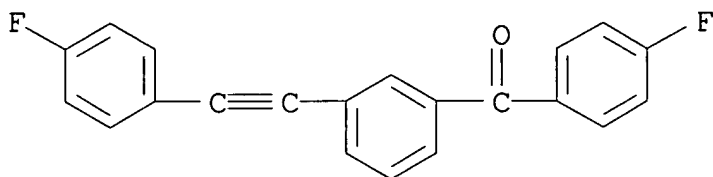


PAGE 2-A



CM 2

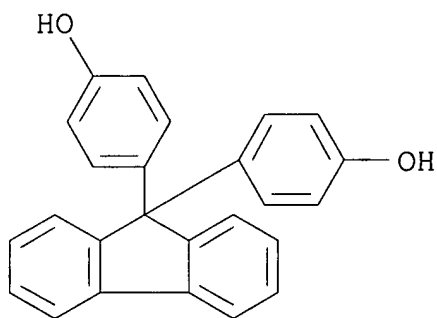
CRN 226884-35-1  
CMF C21 H12 F2 O



CM 3

CRN 3236-71-3

CMF C25 H18 O2



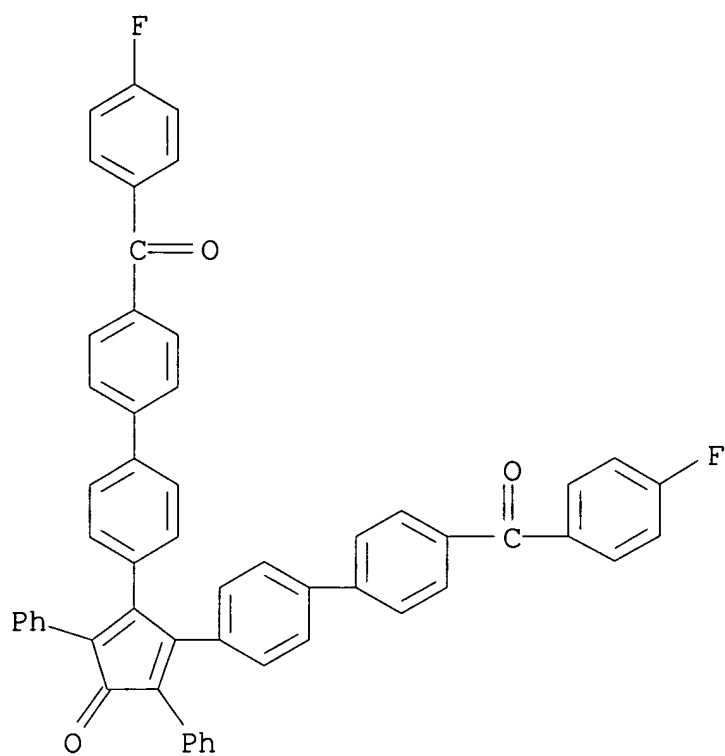
RN 418792-80-0 HCA

CN 2,4-Cyclopentadien-1-one, 3,4-bis[4'-(4-fluorobenzoyl)[1,1'-biphenyl]-4-yl]-2,5-diphenyl-, polymer with 4,4'-(9H-fluoren-9-ylidene)bis[phenol] and (4-fluorophenyl)[3-[(4-fluorophenyl)ethynyl]phenyl]methanone (9CI) (CA INDEX NAME)

CM 1

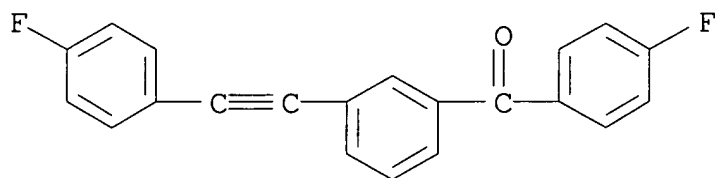
CRN 418792-79-7

CMF C55 H34 F2 O3



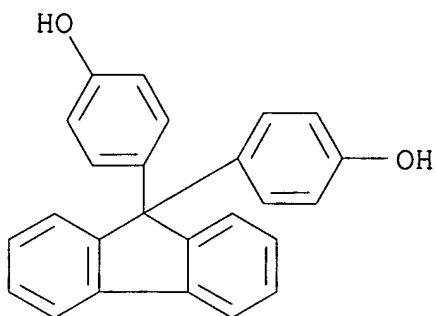
CM 2

CRN 226884-35-1  
CMF C21 H12 F2 O



CM 3

CRN 3236-71-3  
CMF C25 H18 O2



RN 418792-82-2 HCA

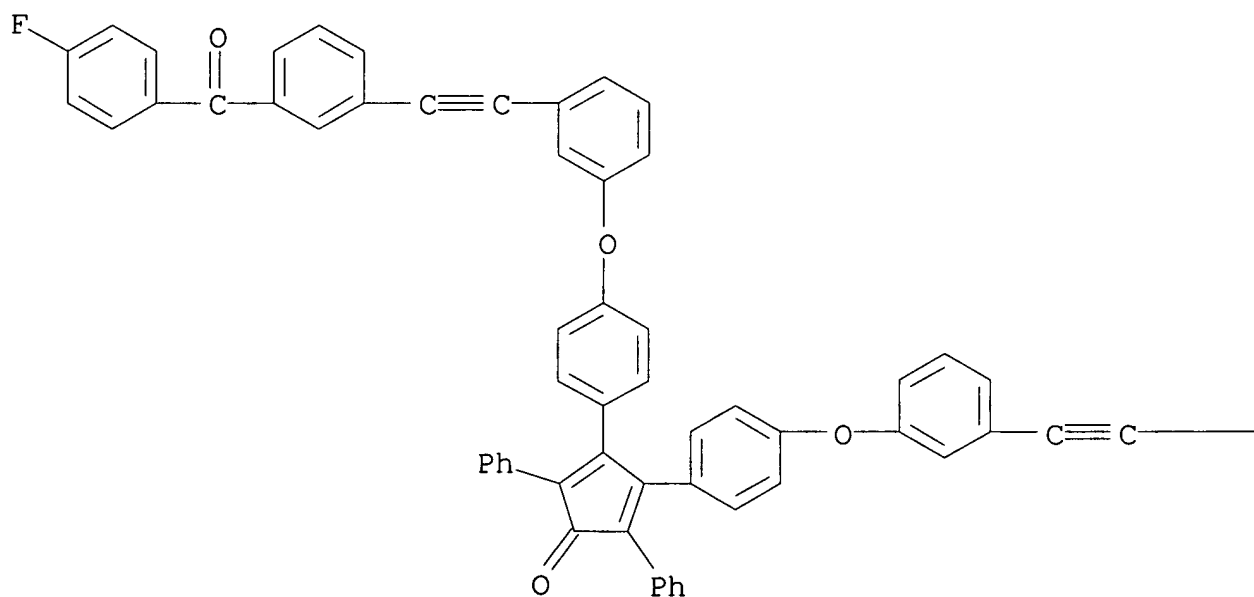
CN 2,4-Cyclopentadien-1-one, 3,4-bis[4-[3-[[3-(4-fluorobenzoyl)phenyl]ethynyl]phenoxy]phenyl]-2,5-diphenyl-, polymer with 4,4'-(9H-fluoren-9-ylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

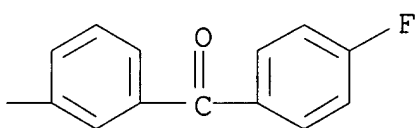
CRN 418792-81-1

CMF C71 H42 F2 O5

PAGE 1-A



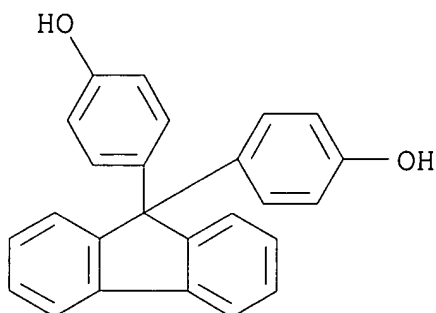
PAGE 1-B



CM 2

CRN 3236-71-3

CMF C25 H18 O2



RN 418792-85-5 HCA

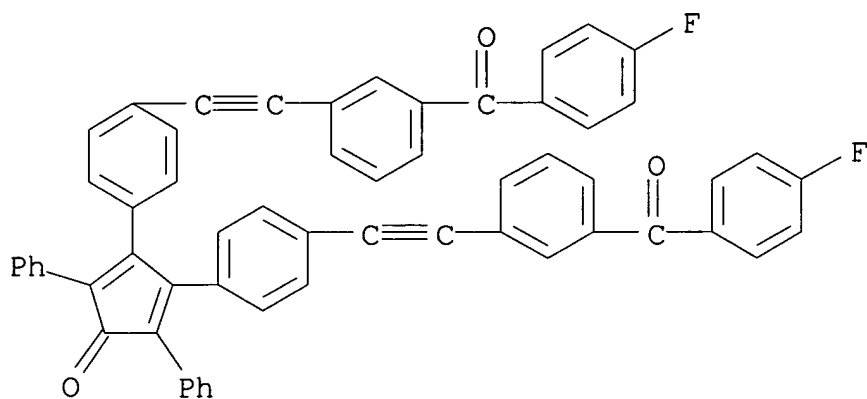
CN 2,4-Cyclopentadien-1-one, 3,4-bis[4-[[3-(4-fluorobenzoyl)phenyl]ethynyl]phenyl]-2,5-diphenyl-, polymer with 4,4'-(9H-fluoren-9-ylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 418792-84-4

CMF C59 H34 F2 O3

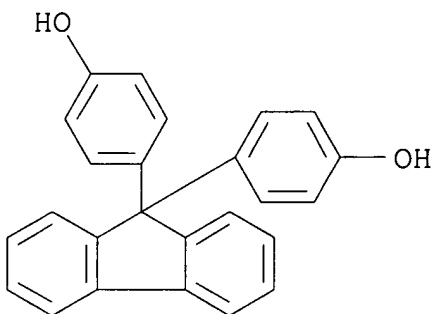




CM 2

CRN 3236-71-3

CMF C25 H18 O2



IC ICM C08J009-00

INCL 521050500

CC 42-3 (Coatings, Inks, and Related Products)

Section cross-reference(s): 76

IT Electric **insulators**

Porous materials

(**coatings**; nanoporous polymeric network as  
**insulating coatings** having reduced  
**dielec.** const.)

IT Polyoxyarylenes

(crosslinked via Diels-Alder reaction; prepn. of photogenerated  
nanoporous polymeric network having reduced **dielec.**  
const.)

IT Diels-Alder reaction

(for crosslinking of nanoporous polymeric network as  
**insulating coatings** having reduced

- dielec. const.)**
- IT Crosslinking  
(for formation of nanoporous polymeric network as **insulating coatings** having reduced **dielec. const.**)
- IT Coating materials  
(light-sensitive; nanoporous polymeric network as **insulating coatings** having reduced **dielec. const.**)
- IT Polymer networks  
(nanoporous polymeric network as **insulating coatings** having reduced **dielec. const.**)
- IT Polymer degradation  
(photochem., of porogen; for formation of nanoporous polymeric network as **insulating coatings** having reduced **dielec. const.**)
- IT Coating materials  
(porous; nanoporous polymeric network as **insulating coatings** having reduced **dielec. const.**)
- IT Integrated circuits  
(using nanoporous polymeric network as **insulating coatings** having reduced **dielec. const.**)
- IT 272115-24-9DP, 4-benzoylphenyl-terminated  
(crosslinked via Diels-Alder reaction; prepn. of photogenerated nanoporous polymeric network as **insulating coatings** having reduced **dielec. const.**)
- IT 345-83-5DP, 4-Fluorobenzophenone, reaction product with fluorene bisphenol-4-fluoro-3'-(4-fluorobenzoyl)tolane copolymer  
**418792-78-6P 418792-80-0P 418792-82-2P 418792-85-5P**  
(crosslinked via Diels-Alder reaction; prepn. of photogenerated nanoporous polymeric network having reduced **dielec. const.**)
- IT 57840-38-7, Triphenylsulfonium hexafluoroantimonate  
(photoinitiator; prepn. of photogenerated nanoporous polymeric network having reduced **dielec. const.**)
- IT 87261-04-9, p-(tert-Butoxycarbonyloxy)styrene homopolymer  
(porogen; prepn. of photogenerated nanoporous polymeric network having reduced **dielec. const.**)
- IT 7440-21-3, Silicon, miscellaneous  
(wafer, substrate; prepn. of photogenerated nanoporous polymeric network having reduced **dielec. const.**)

L45 ANSWER 4 OF 8 HCA COPYRIGHT 2005 ACS on STN

136:119228 Low **dielectric** constant materials with polymeric networks and their preparation. Lau, Kreisler; Liu, Feng Quan; Korolev, Boris; Brouk, Emma; Zhrebina, Ruslan; Nalewajek, David (Honeywell International Inc., USA). PCT Int. Appl. WO 2002006366

A1 20020124, 24 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2.

APPLICATION: WO 2001-US22213 20010712. PRIORITY: US

2000-2000/619237 20000719.

AB A low **dielec.** const. material has a polymeric network formed by reaction of a first component comprising a polymeric strand and a second component comprising a mol. having a central portion with .gtoreq.3 arms extending from the central portion, wherein each of the arms includes a backbone with a reactive group. The contemplated low **dielec.** const. materials are useful in fabrication of electronic devices, and particularly, contemplated devices include integrated circuits. Thus, a poly(arylene ether) prep'd. from fluorene bisphenol and 4-fluoro-3'-(4-fluorobenzoyl)tolane was blend with tetrakis(tolanyl)adamantane in cyclohexanone, spin cast on a wafer, baked at 250 for 2 min, cured at 400.degree. for 1 h to form a polymeric network, showing disappearance of ethynyl groups monitored by FTIR at wavelength 2200 cm-1.

IT **390417-44-4P**

(prepn. of low **dielec.** const. polymeric networks by polymn. of polymeric strands with cage compds.)

RN 390417-44-4 HCA

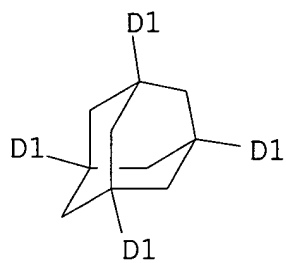
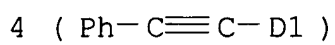
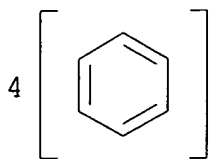
CN Methanone, (4-fluorophenyl)[3-[(4-fluorophenyl)ethynyl]phenyl]-, polymer with 4,4'-(9H-fluoren-9-ylidene)bis[phenol] and 1,3,5-tris[(phenylethynyl)phenyl]tricyclo[3.3.1.1<sup>3,7</sup>]decane (9CI) (CA INDEX NAME)

CM 1

CRN 390417-43-3

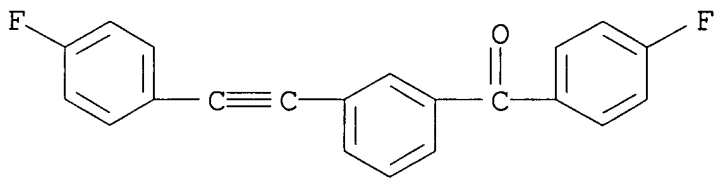
CMF C66 H48

CCI IDS



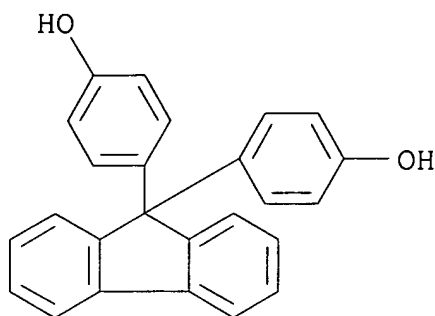
CM 2

CRN 226884-35-1  
CMF C21 H12 F2 O



CM 3

CRN 3236-71-3  
CMF C25 H18 O2



- IC ICM C08G014-04
- ICS C08G073-24; C08G063-78; C08G063-87
- CC 37-3 (Plastics Manufacture and Processing)
- Section cross-reference(s): 76
- ST polyether arylene tolanyladamantane copolymer elec **insulator**  
; electronic device polymeric network **insulator** prepn;  
integrated circuit polymeric network **insulator** prepn
- IT Polyethers, reactions  
(arom.; prepn. of low **dielec.** const. polymeric networks  
by polymn. of polymeric strands with cage compds.)
- IT Polyketones  
(polyacetylene-polyether-; prepn. of low **dielec.** const.  
polymeric networks by polymn. of polymeric strands with cage  
compds.)
- IT Polyethers, preparation  
(polyacetylene-polyketone-; prepn. of low **dielec.**  
const. polymeric networks by polymn. of polymeric strands with  
cage compds.)
- IT Polyimides, reactions  
(polyamide-; prepn. of low **dielec.** const. polymeric  
networks by polymn. of polymeric strands with cage compds.)
- IT Polyacetylenes, preparation  
(polyether-polyketone-; prepn. of low **dielec.** const.  
polymeric networks by polymn. of polymeric strands with cage  
compds.)
- IT Polyamides, reactions  
(polyimide-; prepn. of low **dielec.** const. polymeric  
networks by polymn. of polymeric strands with cage compds.)
- IT Electric **insulators**  
(prepn. of low **dielec.** const. polymeric networks by  
polymn. of polymeric strands with cage compds.)
- IT Fullerenes
- Polyamides, reactions  
(prepn. of low **dielec.** const. polymeric networks by  
polymn. of polymeric strands with cage compds.)
- IT Integrated circuits

Semiconductor devices

- (prepn. of low **dielec.** const. polymeric networks by  
polymn. of polymeric strands with cage compds. for)
- IT 7314-86-5P 159068-78-7P 272115-24-9P 390417-43-3P  
(prepn. of low **dielec.** const. polymeric networks by  
polymn. of polymeric strands with cage compds.)
- IT **390417-44-4P**  
(prepn. of low **dielec.** const. polymeric networks by  
polymn. of polymeric strands with cage compds.)
- IT 281-23-2, Adamantane 536-74-3, Phenylacetylene 2292-79-7,  
Diamantane 99685-96-8, Fullerene 144970-32-1 158562-38-0  
164025-88-1 390411-24-2 390411-25-3 390411-26-4  
(prepn. of low **dielec.** const. polymeric networks by  
polymn. of polymeric strands with cage compds.)

L45 ANSWER 5 OF 8 HCA COPYRIGHT 2005 ACS on STN

136:71336 Aromatic polyarylene ether-based compositions and their  
materials for electrically **insulating film**  
formation. Okada, Takashi; Nishikawa, Michinori; Yamada, Kinji (Jsr  
Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002003752 A2 20020109, 18  
pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-186518  
20000621.

AB Title compns., useful for elec. **insulator films**  
with good crack, heat, and moisture resistance, comprise arom.  
polyarylene ethers, org. solvents, and radical developers and/or  
unsatd. compds. (e.g., polymerizable carbon-carbon double or triple  
bond-contg. compds.). A mixt. of cyclohexanone,  
2,3-dimethyl-2,3-diphenylbutane, and 9,9-bis(4-  
hydroxyphenyl)fluorene-9,9-bis(4-hydroxy-3-methylphenyl)fluorene-  
4,4'-difluorobenzophenone copolymer was coated on a Si wafer to a  
5-.mu.m thickness and baked at 80.degree. for 1 min and 380.degree.  
for 5 min to form a film showing no cracks after soaking in water  
for 2 h and 1% wt. loss temp. of 467.degree..

IT **383434-85-3P**, 9,9-Bis(4-hydroxyphenyl)fluorene-9,9-bis(4-  
hydroxy-3-methylphenyl)fluorene-4,4'-difluorobenzophenone-4,4'-  
bis(phenylethynyl)diphenyl ether copolymer **383434-86-4P**,  
9,9-Bis(4-hydroxyphenyl)fluorene-9,9-bis(4-hydroxy-3-  
methylphenyl)fluorene-4,4'-difluorobenzophenone-1,3,5-tris[(4-  
methylphenyl)ethynyl]benzene copolymer **383434-89-7P**,  
9,9-Bis(4-hydroxyphenyl)fluorene-9,9-bis(4-hydroxy-3-  
methylphenyl)fluorene-4,4'-difluorobenzophenone-1,4-  
bis(phenylethynyl)benzene copolymer  
(crosslinked; arom. polyarylene ether-based crosslinkable  
**coatings** for elec. **insulators** with crack and  
heat resistance)

RN 383434-85-3 HCA

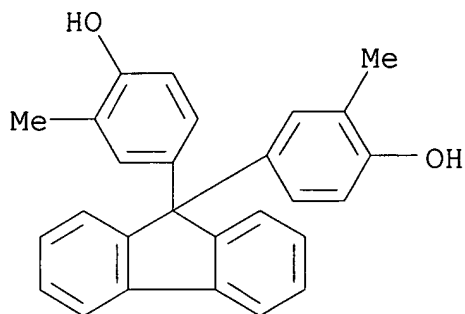
CN Methanone, bis(4-fluorophenyl)-, polymer with 4,4'-(9H-fluoren-9-  
ylidene)bis[2-methylphenol], 4,4'-(9H-fluoren-9-ylidene)bis[phenol]

and 1,1'-oxybis[4-(phenylethynyl)benzene] (9CI) (CA INDEX NAME)

CM 1

CRN 88938-12-9

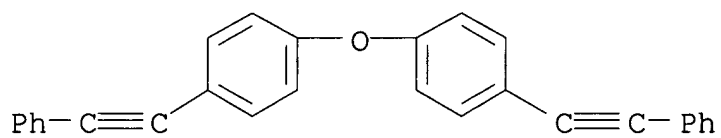
CMF C27 H22 O2



CM 2

CRN 59745-29-8

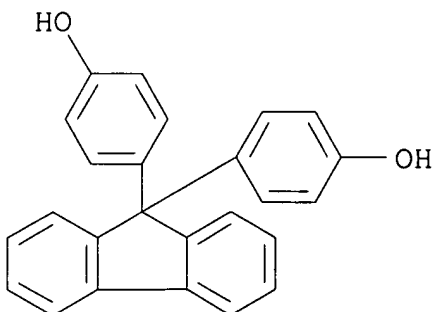
CMF C28 H18 O



CM 3

CRN 3236-71-3

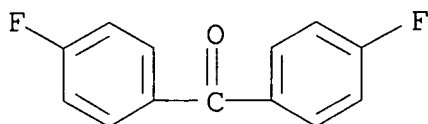
CMF C25 H18 O2



CM 4

CRN 345-92-6

CMF C13 H8 F2 O



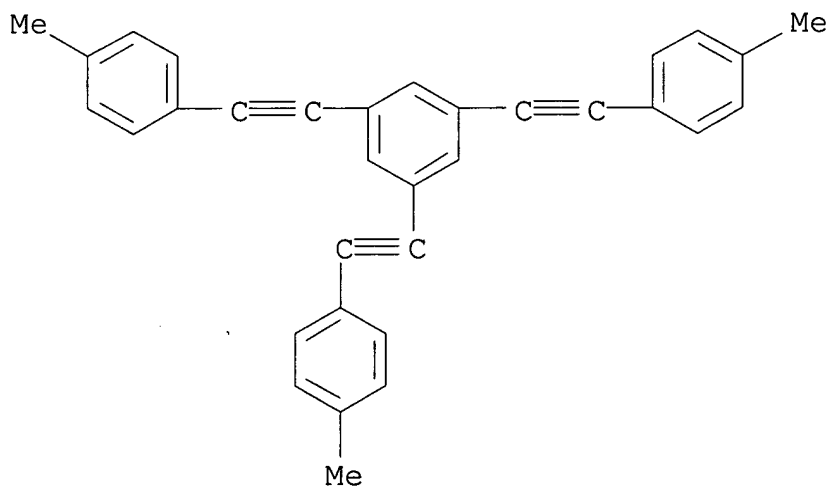
RN 383434-86-4 HCA

CN Methanone, bis(4-fluorophenyl)-, polymer with 4,4'-(9H-fluoren-9-ylidene)bis[2-methylphenol], 4,4'-(9H-fluoren-9-ylidene)bis[phenol] and 1,3,5-tris[(4-methylphenyl)ethynyl]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 381227-40-3

CMF C33 H24

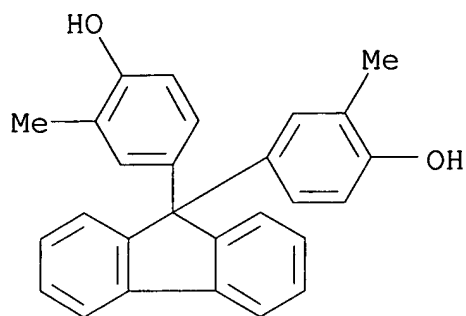


CM 2

CRN 88938-12-9

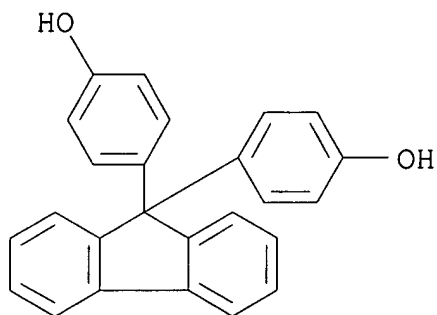
CMF C27 H22 O2





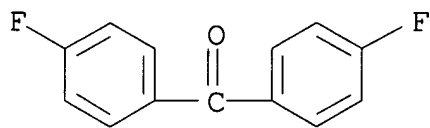
CM 3

CRN 3236-71-3  
CMF C25 H18 O2



CM 4

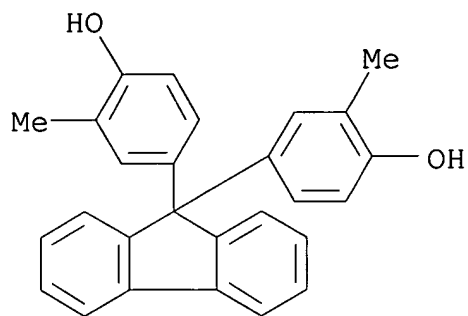
CRN 345-92-6  
CMF C13 H8 F2 O



RN 383434-89-7 HCA  
CN Methanone, bis(4-fluorophenyl)-, polymer with 1,4-bis(phenylethynyl)benzene, 4,4'-(9H-fluoren-9-ylidene)bis[2-methylphenol] and 4,4'-(9H-fluoren-9-ylidene)bis[phenol] (9CI) (CA INDEX NAME)

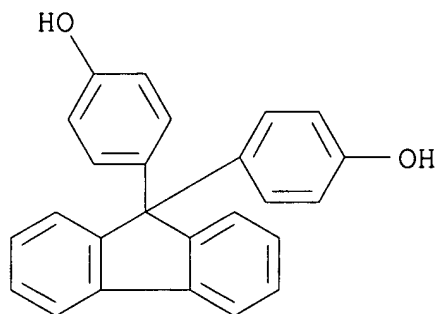
CM 1

CRN 88938-12-9  
CMF C27 H22 O2



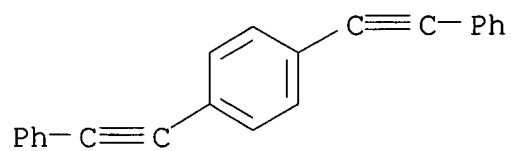
CM 2

CRN 3236-71-3  
CMF C25 H18 O2



CM 3

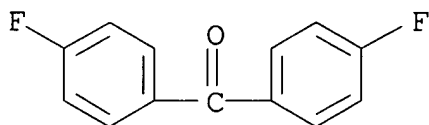
CRN 1849-27-0  
CMF C22 H14



CM 4

CRN 345-92-6

CMF C13 H8 F2 O



- IC ICM C09D004-06  
ICS C08F002-44; C08F004-00; C08F004-32; C08F283-06; C08G065-48;  
C09D171-08
- CC 42-10 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 76
- ST polyarylene ether radical developer **coating** elec  
**insulator** crack resistance; heat resistance elec  
**insulator** polyarylene ether radical developer coating;  
moisture resistance polyarylene ether radical developer coating
- IT Electric **insulators**  
(**coatings**; arom. polyarylene ether-based crosslinkable  
**coatings** for elec. **insulators** with crack and  
heat resistance)
- IT Polyoxyarylenes  
(crosslinked; arom. polyarylene ether-based crosslinkable  
**coatings** for elec. **insulators** with crack and  
heat resistance)
- IT Peroxides, uses  
(org.; arom. polyarylene ether-based crosslinkable  
**coatings** for elec. **insulators** with crack and  
heat resistance)
- IT 1068-27-5, 2,5-Dimethyl-2,5-di(tert-butylperoxy)-3-hexyne  
1889-67-4, 2,3-Dimethyl-2,3-diphenylbutane  
(arom. polyarylene ether-based crosslinkable **coatings**  
for elec. **insulators** with crack and heat resistance)
- IT 349672-97-5P, 9,9-Bis(4-hydroxyphenyl)fluorene-9,9-bis(4-hydroxy-3-  
methylphenyl)fluorene-4,4'-difluorobenzophenone copolymer  
383434-83-1P, 9,9-Bis(4-hydroxyphenyl)fluorene-9,9-bis(4-hydroxy-3-  
methylphenyl)fluorene-4,4'-difluorobenzophenone-divinylbenzene  
copolymer 383434-84-2P, 9,9-Bis(4-hydroxyphenyl)fluorene-9,9-bis(4-  
hydroxy-3-methylphenyl)fluorene-4,4'-difluorobenzophenone-2,2'-  
diallylbisphenol A copolymer **383434-85-3P**,  
9,9-Bis(4-hydroxyphenyl)fluorene-9,9-bis(4-hydroxy-3-  
methylphenyl)fluorene-4,4'-difluorobenzophenone-4,4'-  
bis(phenylethynyl)diphenyl ether copolymer **383434-86-4P**,  
9,9-Bis(4-hydroxyphenyl)fluorene-9,9-bis(4-hydroxy-3-  
methylphenyl)fluorene-4,4'-difluorobenzophenone-1,3,5-tris[(4-  
methylphenyl)ethynyl]benzene copolymer 383434-87-5P,  
9,9-Bis(4-hydroxyphenyl)fluorene-9,9-bis(4-hydroxy-3-  
methylphenyl)fluorene-4,4'-difluorobenzophenone-1,3,5-

triethynylbenzene copolymer 383434-88-6P, 9,9-Bis(4-hydroxyphenyl)fluorene-9,9-bis(4-hydroxy-3-methylphenyl)fluorene-4,4'-difluorobenzophenone-bis(p-ethynylphenyl) ether copolymer **383434-89-7P**, 9,9-Bis(4-hydroxyphenyl)fluorene-9,9-bis(4-hydroxy-3-methylphenyl)fluorene-4,4'-difluorobenzophenone-1,4-bis(phenylethynyl)benzene copolymer (crosslinked; arom. polyarylene ether-based crosslinkable **coatings** for elec. **insulators** with crack and heat resistance)

L45 ANSWER 6 OF 8 HCA COPYRIGHT 2005 ACS on STN

135:304601 Poly(arylene ether) homopolymer compositions and their preparation. Lau, Kreisler S. Y.; Chen, Tian-An; Korolev, Boris A.; Brouk, Emma (AlliedSignal Inc., USA). U.S. US 6303733 B1 20011016, 33 pp., Cont.-in-part of U.S. 6,124,421. (English). CODEN: USXXAM. APPLICATION: US 1998-197478 19981120. PRIORITY: US 1997-990157 19971212.

AB **Dielec.** compns. comprises .gtoreq.1 poly(arylene ether) polymers Z-(O-Y-O-Ar)<sub>n</sub>-O-Y-O-Z, where n = 1-200, Y and Ar = a divalent arylene radical, Y derived from bisphenol compds. HO-Y-OH, Ar derived from difluoro diarylacetylenes and/or ethynylated benzophenones F-Ar-F and Z is optionally H, Me or derived from a monofluoro-benzophenone deriv. Z-F. The poly(arylene ether) polymers are useful for a variety of microelectronic devices such as integrated circuits and multichip modules.

IT **366838-06-4P 366838-08-6P**

(poly(arylene ether) homopolymer compns. for microelectronic devices)

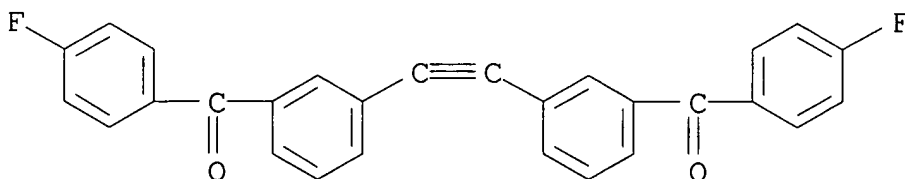
RN 366838-06-4 HCA

CN Methanone, (1,2-ethynediyl-di-3,1-phenylene)bis[(4-fluorophenyl)-, polymer with 4,4'-(9H-fluoren-9-ylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

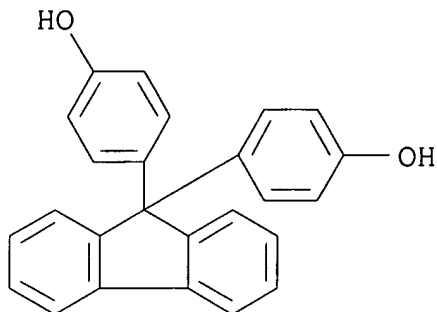
CRN 272115-21-6

CMF C28 H16 F2 O2

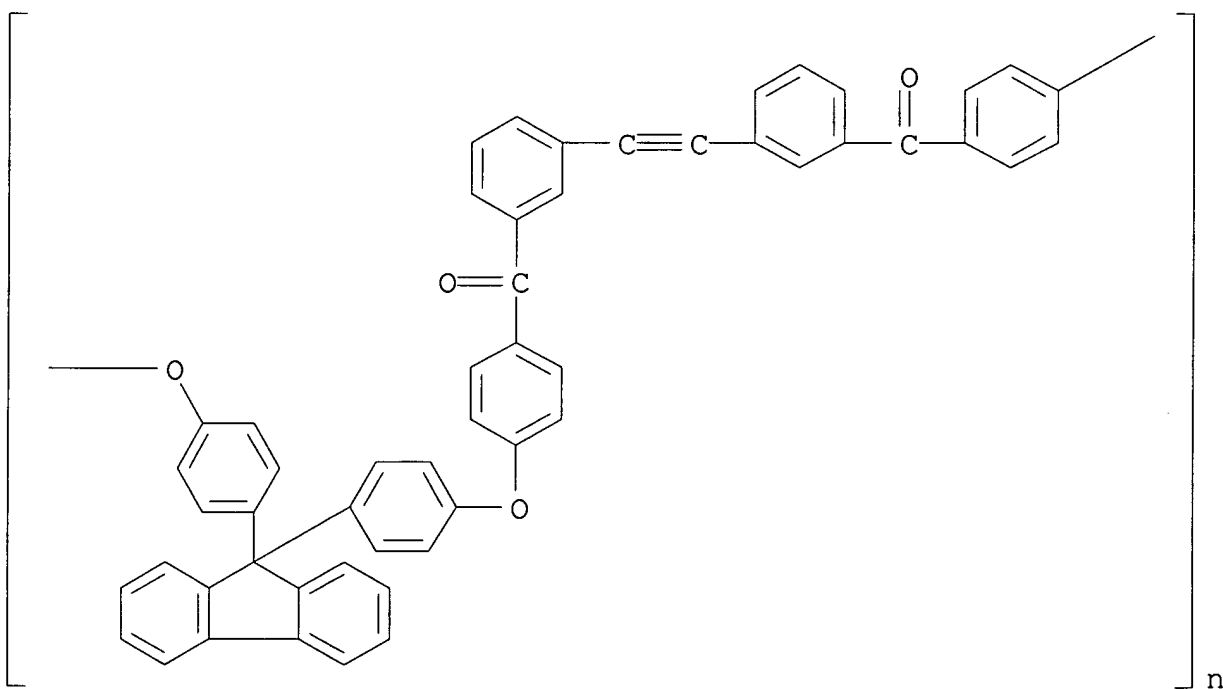


CM 2

CRN 3236-71-3  
CMF C25 H18 O2



RN	366838-08-6	HCA
CN	Poly(oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,3-phenylene-1,2-ethynediyl-1,3-phenylenecarbonyl-1,4-phenylene) (9CI) (CA INDEX NAME)	



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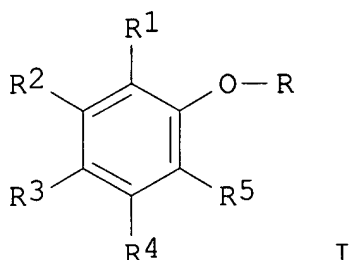
IC      ICM  C08G079-02
INCL   528169000
CC      37-3 (Plastics Manufacture and Processing)
        Section cross-reference(s): 42, 76
ST      Polyarylene ether microelectronic device dielec const;
        dielec integrated circuit multichip module polyarylene ether
IT      Heat-resistant materials

```

(**dielec. coatings**; poly(arylene ether)  
homopolymer compns. for microelectronic devices)  
IT **Electric insulators**  
(heat-resistant **coatings**; poly(arylene ether)  
homopolymer compns. for microelectronic devices)  
IT 272115-24-9DP, end-capped with 4-fluorobenzophenone 272115-26-1P  
**366838-06-4P 366838-08-6P**  
(poly(arylene ether) homopolymer compns. for microelectronic  
devices)

L45 ANSWER 7 OF 8 HCA COPYRIGHT 2005 ACS on STN  
134:201689 Aromatic aliphatic ether-containing solvent for polymer  
**dielectric** material. Leonte, Oana M.; Nakano, Tadashi;  
Bellis, Kelly M.; Lowe, Chrysler (Allied-Signal, Inc., USA). Jpn.  
Kokai Tokkyo Koho JP 2001055600 A2 20010227, 13 pp. (Japanese).  
CODEN: JKXXAF. APPLICATION: JP 1999-227213 19990811.

GI



I

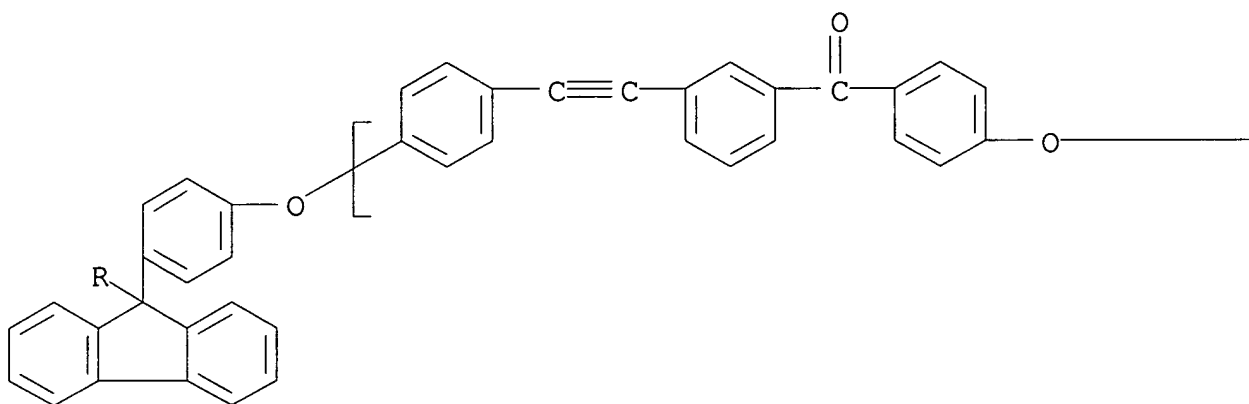
AB The solvent contains arom. aliph. ether represented as I ( $R = C_nH_{2n+1}$ ;  $n = 1-6$ ;  $R1-R5 = C_mH_{2m+1}$ ;  $m = 0-3$ ) and the solvent is used in formation of a **dielec. polymer film**. A soln. of the **dielec. polymer** is applied on a substrate and the solvent is applied to the edge of the substrate surface. The solvent is used for removal of wafer edge bead and rinsing of the opposite side of wafers. A microelectronic device prepd. by using the environment-friendly high-b.p. solvent is also claimed.

IT **327629-87-8**  
(arom. aliph. ether solvent for cleaning polymer elec.  
**insulator film** for semiconductor device  
fabrication)

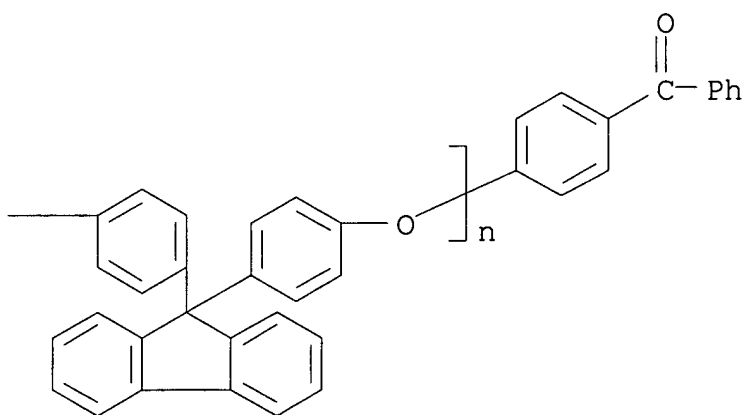
RN 327629-87-8 HCA

CN Poly(oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,3-phenylene-1,2-ethynediyl-1,4-phenylene), .alpha.-(4-benzoylphenyl)-.omega.-[4-[9-[4-(4-benzoylphenoxy)phenyl]-9H-fluoren-9-yl]phenoxy]- (9CI) (CA INDEX NAME)

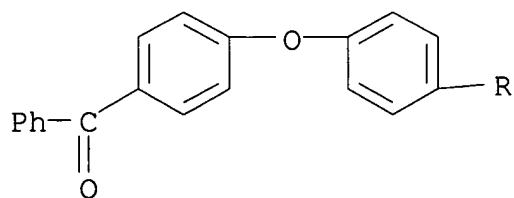
PAGE 1-A



PAGE 1-B



PAGE 2-A



IC ICM C11D007-50  
ICS C08L071-12; C09D009-00; C11D007-26; C08J005-18

CC 76-10 (Electric Phenomena)  
Section cross-reference(s): 38, 46

ST arom aliph ether solvent cleaning **insulator**; polymer elec  
**insulator** cleaning solvent; high boiling point solvent  
**insulator** cleaning; environment friendly solvent elec  
**insulator** polymer; microelectronic device fabrication  
cleaning solvent

IT Electric **insulators**  
Electronic device fabrication  
Microelectronic devices  
(arom. aliph. ether solvent for cleaning polymer elec.  
**insulator film** for semiconductor device  
fabrication)

IT Glass, uses  
Polyoxyarylenes  
Polysiloxanes, uses  
Silazanes  
(arom. aliph. ether solvent for cleaning polymer elec.  
**insulator film** for semiconductor device  
fabrication)

IT Solvents  
(org.; arom. aliph. ether solvent for cleaning polymer elec.  
**insulator film** for semiconductor device  
fabrication)

IT Polyketones  
(polyacetylene-polyether-, cardo; arom. aliph. ether solvent for  
cleaning polymer elec. **insulator film** for  
semiconductor device fabrication)

IT Cardo polymers  
(polyacetylene-polyether-polyketones; arom. aliph. ether solvent  
for cleaning polymer elec. **insulator film** for  
semiconductor device fabrication)

IT Polyethers, uses  
(polyacetylene-polyketone-, cardo; arom. aliph. ether solvent for  
cleaning polymer elec. **insulator film** for  
semiconductor device fabrication)

IT Polyketones  
(polyarylene-polyether-; arom. aliph. ether solvent for cleaning  
polymer elec. **insulator film** for  
semiconductor device fabrication)

IT Polyethers, uses  
(polyarylene-polyketone-; arom. aliph. ether solvent for cleaning  
polymer elec. **insulator film** for  
semiconductor device fabrication)

IT Polyacetylenes, uses  
(polyether-polyketone-, cardo; arom. aliph. ether solvent for



cleaning polymer elec. **insulator film** for semiconductor device fabrication)

IT **327629-87-8**

(arom. aliph. ether solvent for cleaning polymer elec. **insulator film** for semiconductor device fabrication)

IT 100-66-3, Anisol, uses 103-73-1, Phenetol

(arom. aliph. ether solvent for cleaning polymer elec. **insulator film** for semiconductor device fabrication)

L45 ANSWER 8 OF 8 HCA COPYRIGHT 2005 ACS on STN

133:18276 Poly(arylene ether) homopolymer compositions, monomers, and their manufacture for coating wafers. Lau, Kreisler S. Y.; Chen, Tian-an; Kprolev, Boris A.; Brouk, Emma (Alliedsignal Inc., USA). PCT Int. Appl. WO 2000031163 A2 20000602, 68 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1999-US27516 19991119. PRIORITY: US 1998-197478 19981120.

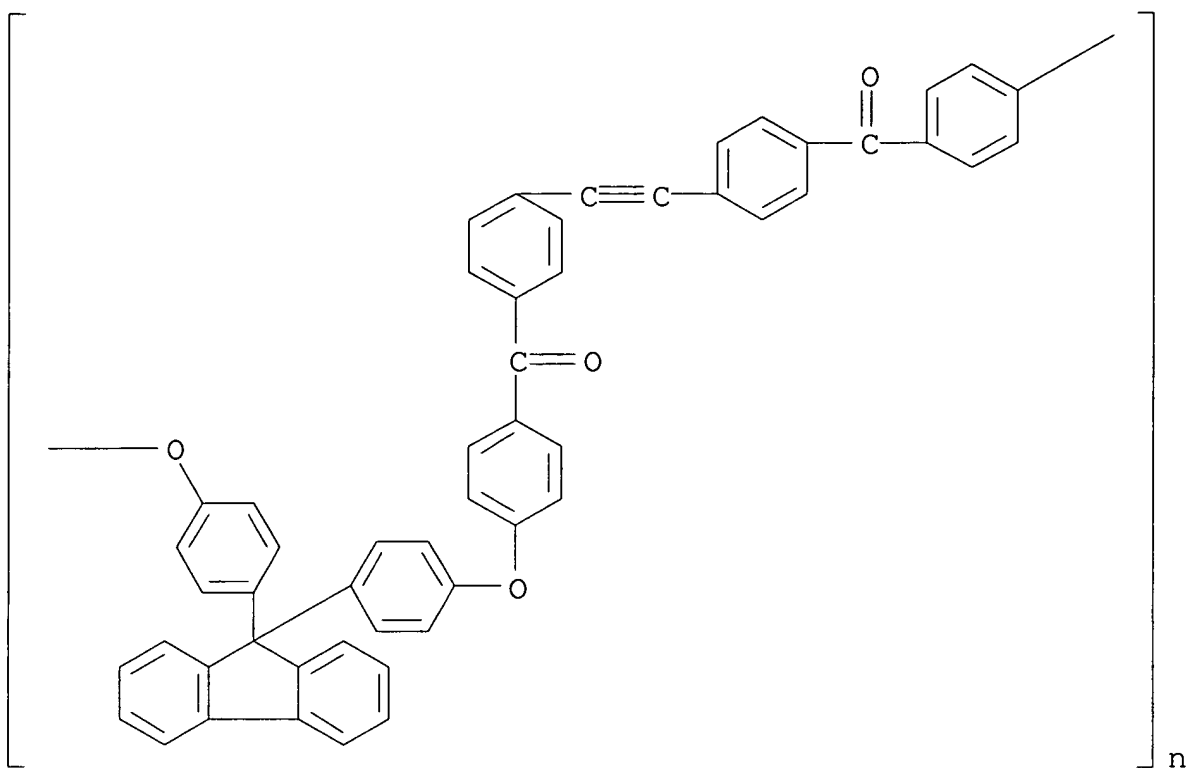
AB The **dielec.** compns. have the repetitive structural unit Z(OYOAr)nYOZ, where n = 1-200, Y and Ar are each a divalent arylene radical, Y derived from bisphenol compds. HO-Y-OH, Ar derived from difluoro diarylacetylenes and/or ethynylated benzophenones F-Ar-F, and Z is optionally H, Me or derived from a monofluoro-benzophenone deriv. Z-F. Such poly(arylene ether) polymers are employed with a variety of microelectronic devices, for example, integrated circuits and multichip modules. Thus, 3,3'-bis(4-fluorobenzoyl)tolane copolymer with 9,9'-bis(4-hydroxyphenyl)fluorene soln. was coated onto a wafer to give a **coating** having **dielec.** const. 2.84.

IT **272115-23-8P 272115-25-0P**

(poly(arylene ether) homopolymer compns. for semiconductor devices)

RN 272115-23-8 HCA

CN Poly(oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,4-phenylene-1,2-ethynediyl-1,4-phenylenecarbonyl-1,4-phenylene) (9CI) (CA INDEX NAME)



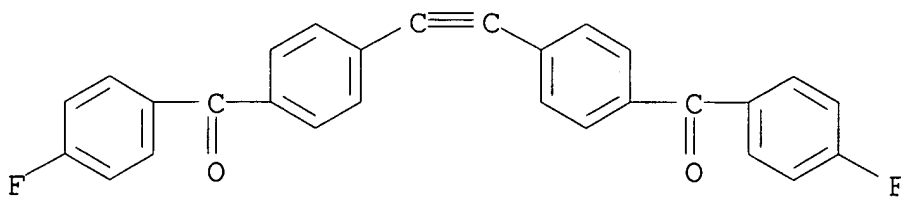
RN 272115-25-0 HCA

CN Methanone, (1,2-ethynediyl-di-4,1-phenylene)bis[(4-fluorophenyl)-, polymer with 4,4'-(9H-fluoren-9-ylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 135014-13-0

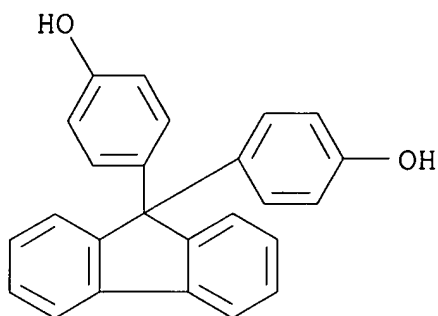
CMF C28 H16 F2 O2



CM 2

CRN 3236-71-3

CMF C25 H18 O2



IC ICM C08G065-40  
 ICS H01L023-29  
 CC 37-3 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 76  
 ST polyarylene ether manuf electronic device use; **dielec**  
**film** material polyarylene ether; heat resistance film  
 polyarylene ether; integrated circuit polyarylene ether moisture  
 resistance  
 IT Heat-resistant materials  
 Heat-resistant materials  
 (**dielec.**; poly(arylene ether) homopolymer compns. for  
 semiconductor devices)  
 IT Electric **insulators**  
 Electric **insulators**  
 (heat-resistant; poly(arylene ether) homopolymer compns. for  
 semiconductor devices)  
 IT **272115-23-8P** 272115-24-9DP, fluorobenzophenone-terminated  
**272115-25-0P** 272115-26-1P  
 (poly(arylene ether) homopolymer compns. for semiconductor  
 devices)